

What is claimed is:

Claims:

1. A lamp system for generating ultraviolet radiation, comprising:
 a power supply;
 a lamp head including a lamp capable of generating ultraviolet radiation when energized by microwave energy;
- 5 a plurality of magnetrons supplying microwave energy to said lamp head effective to excite a plasma in said lamp for generating ultraviolet radiation;
 at least one low-voltage device associated with said lamp head;
 and
- 10 a single electrical cable operative to electrically couple said power supply with said plurality of magnetrons and operative to electrically couple said power supply with said at least one low-voltage device.

2. The lamp system of claim 1 wherein said electrical cable includes a first set of conductors configured to carry a first voltage and a second set of conductors configured to carry a second voltage less than said first voltage, said first set of conductors electrically coupling said power supply with said
5 plurality of magnetrons and said second set of conductors electrically coupling said power supply with said at least one low-voltage device.

3. The lamp system of claim 2 wherein said first voltage is less than about 10,000 DC Volts and said second voltage is less than about 300 AC Volts.

4. The lamp system of claim 2 wherein said first voltage is in the range of about 4,000 DC Volts to about 6,000 DC Volts.

5. The lamp system of claim 1 wherein said at least one low-voltage device is selected from the group consisting of a blower, a sensor, and a filament of one of said plurality of magnetrons.

6. An electrical cable for a lamp system including a power supply, a lamp head having a lamp capable of generating ultraviolet radiation when energized by microwave energy, a plurality of magnetrons supplying microwave energy effective to excite a plasma in said lamp for generating ultraviolet
- 5 radiation, and at least one low-voltage device associated with said lamp head, said electrical cable comprising:
- a first set of conductors configured to carry a first voltage, said first set of conductors adapted for electrically coupling the power supply with the plurality of magnetrons; and
- 10 a second set of conductors configured to carry a second voltage less than said first voltage, said second set of conductors electrically coupling said power supply with the at least one low-voltage device.

7. The electrical cable of claim 6 wherein said first voltage is less than about 10,000 DC Volts and said second voltage is less than about 300 AC Volts.

8. The electrical cable of claim 6 wherein said first voltage is in the range of about 4,000 DC Volts to about 6,000 DC Volts.

9. The electrical cable of claim 6 wherein said first set of conductors is positioned radially inward of said second set of conductors, and further comprising:

a first shield disposed radially between said first set of conductors
5 and said second set of conductors.

10. The electrical cable of claim 9 further comprising:
a second shield disposed radially outward of said second set of
conductors.

11. An electrical cable for a lamp system including a power supply, a lamp head having a lamp capable of generating ultraviolet radiation when energized by microwave energy, a plurality of magnetrons supplying microwave energy effective to excite a plasma in said lamp for generating ultraviolet
- 5 radiation, and at least one low-voltage device associated with said lamp head, said electrical cable comprising:
- a plurality of high-voltage conductors electrically coupled with said plurality of magnetrons;
- a plurality of low-voltage conductors electrically coupled with said
- 10 at least on low-voltage device;
- an inner shield separating said plurality of high-voltage conductors from said plurality of low-voltage conductors; and
- an outer shield surrounding said plurality of low-voltage conductors.

12. The electrical connector of claim 11 wherein said plurality of high-voltage conductors are positioned in a first circular arrangement radially inside said inner shield and said plurality of low-voltage conductors are positioned in a second circular arrangement between said inner shield and said outer shield.

13. The electrical connector of claim 12 wherein said inner shield is positioned radially between said plurality of high-voltage conductors and said plurality of low-voltage conductors.

14. The electrical connector of claim 11 wherein said plurality of low-voltage conductors are more numerous than said plurality of high-voltage conductors.